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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/077,980	02/20/2002	Jas-Pal S. Badyal	9580-045	7998

20582 7590 07/28/2003

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EXAMINER

CHANG, VICTOR S

ART UNIT	PAPER NUMBER
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1771

DATE MAILED: 07/28/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/077,980	BADYAL ET AL.	
	Examiner	Art Unit	
	Victor S Chang	1771	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on _____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 13-27 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 13-27 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 20 February 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☒ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) <u>0220</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 19-20 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claims 19-20, line 1 of each claim, the phrase "fluoro-substituted group" is vague, indefinite and confusing. The Specification clearly teaches that "fluorinated surfactant", "perfluoroalkylamine" and "fluoroalkyl-trialkyl-ammonium salt" at line 2 of each claim, respectively, are reactants which react with the acid pendant group of polyacrylic acid (PAA) (Specification, page 3, lines 7-10; and page 9, lines 4-28), not "fluoro-substituted group" as claimed. Appropriate correction is requested.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claim Rejections - 35 USC § 103

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4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 13, 15, 16 and 21-27 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Yamamoto et al. (US 4410338).

Yamamoto's invention is directed to a gas separating member which comprises a porous substrate and a polymer film formed on a surface of the substrate by plasma polymerization (Abstract). Yamamoto teaches that acrylic acid can be used as a monomer to form the gas separating member (column 20, lines 4-9).

With respect to the product-by-process recitation in claims 13 and 21-27, the Examiner notes that the method limitation has not been shown on the record to produce a patentably distinct article, as such the formed articles are rendered *prima facie* obvious. It should be pointed out that product-by-process claims are product claims and that to be limiting in a product claim, a process limitation must be evidenced as effecting the structure or chemistry of the resultant product over the prior art. Further, the burden of proof for this showing is on Applicant after the Examiner presents an otherwise *prima facie* rejection. Note MPEP 2113 for a more detailed description.

As such, although Yamamoto lacks a teaching of the process of using a pulsed-gas, it is believed that all the product elements of the instantly claimed invention are

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either taught by Yamamoto, or are obvious modifications to one of ordinary skill in the art, motivated by the desire to obtain a suitable gas separating member.

6. Claims 14, 17-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yamamoto et al. (US 4410338) in view of JP 03-243609 (English Abstract).

Yamamoto's teachings are again relied upon as set forth above.

For claims 14, 17-20, it is noted Yamamoto lacks an express teaching of a plasma polymerized polymer film with a fluoro-substituted group. However, JP '609 teaches that a fluoro-substituted group is formed by reacting PAA with 1,1-dihydroperfluoroalkylamine for surface modification. It should also be noted that a perfluoroalkylamine is inherently a fluorinated surfactant, and also inherently contains a terminal-trifluoromethyl group. Further, JP '609 teaches that the reaction is carried out in the presence of an iodide salt and a trialkylamine, which is believed to form an intermediate fluoroalkyl-trialkyl-ammonium salt inherently. As such, it would have been obvious to one of ordinary skill in the art to modify the Yamamoto's PAA film surface with a perfluoroalkylamine or a fluoroalkyl-trialkyl-ammonium salt, as taught by JP '609, to form a fluoro-substituted group, motivated by the desire to obtain a membrane with low surface energy for improved water and contaminant repellency.

7. Claims 14 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yamamoto et al. (US 4410338) in view of JP 57-147514 (English Abstract).

Yamamoto's teachings are again relied upon as set forth above.

For claims 14 and 17, it is noted Yamamoto lacks an express teaching of a plasma polymerized polymer film comprising a terminal-trifluoromethyl group. However,

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JP '514 teaches that a fluorinated thin film can be formed by plasma polymerization of a compound which is obtained by substituting hydrogen atoms of a lower saturated hydrocarbon (e.g., methane) with fluorine. As such, it would have been obvious to one of ordinary skill in the art to form Yamamoto's plasma polymerized polymer film with a trifluoromethyl monomer, motivated by the desire to obtain a gas filter membrane with improved water and contaminant repellency.

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. In addition, the following references are cited of interest for making fluorocarbon polymer thin films:

US 5888591 to Gleason et al. is directed to a fluorocarbon polymer thin film on the surface of a structure by a pulsed-plasma-enhanced chemical vapor deposition process.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Victor S Chang whose telephone number is 703-605-4296. The examiner can normally be reached on 8:30 - 5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Terrel H Morris can be reached on 703-308-2414. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9310 for regular communications and 703-872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.

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VSC

July 16, 2003

A handwritten signature, possibly reading "A. J. R.", consisting of several loops and a final flourish.

7/21/2003